Abstract Submitted
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Shock formation from the interaction of supersonic, radiatively cooled plasma flows with neutral gases[1] F. SUZUKI-VIDAL, S.V. LEBEDEV, J. SKIDMORE, G.F. SWADLING, L.A. PICKWORTH, G. BURDIAK, M. BOCCHI, S. PATANKAR, M. BENNETT, S.N. BLAND, J.P. CHITTENDEN, P. DE GROUCHY, G.N. HALL, E. KHOORY, S.J.P. STAFFORD, L. SUTTLE, R.A. SMITH, Imperial College London, A.J. HARVEY-THOMPSON, Sandia National Laboratories, A. FRANK, E. HANSEN, University of Rochester, M. KRISHNAN, R. MADDEN, K. WILSON-ELLIOTT, Alameda Applied Sciences Corporation, P.L. COLEMAN, Evergreen Sciences, A. CIARDI, Observatoire de Paris — The dynamics of the interaction of supersonic, radiatively cooled plasma flows with applications to laboratory astrophysics are under study on the MAGPIE generator. One of such astrophysical-relevant experiments is the ablated plasma from a radial foil, with typical flow velocities reaching ∼100 km/s. The effect of the ambient medium is studied by adding neutral gases, either using a supersonic gas-nozzle or by enclosing the foil inside a gas-cell. In both cases, the dynamics of the interaction are characterized by the formation of several shock features. Experimental results varying ambient parameters such as gas pressure and gas composition (e.g. He, Ar, Xe) will be presented together with 3-D MHD simulations using the code GORGON.

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F. Suzuki-Vidal
Imperial College London

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